

SOME NOTES ON THE 18-SPOT LADYBIRD (*MYRRHA 18-GUTTATA* L.) (COLEOPTERA: COCCINELLIDAE)

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The 18-spot ladybird (*Myrrha 18-guttata* L.) is a widespread species in its preferred habitat of mature Scots Pine woods. Yet the early stages of this species have rarely been recorded in the wild in Britain, and during the recent Cambridge Ladybird Survey, very few records of this species were sent in. Those that have been noted have usually been single individuals. It has been suggested (Pope and Muggleton *pers. comms.*) that this species, although common on mature Scots Pine, is elusive for two reasons. Firstly, its pattern of creamy white markings on a maroony-brown ground colour makes the species extremely difficult to see with the naked eye against the buds, male catkins and young cones of Scots Pine. Secondly, it has been suggested that the 18-spot tends to live and breed mainly in the high crowns of the pine trees. I was fairly convinced that the species was very cryptic when at rest, for I had only once previously found the species except by beating. However, I could find no documented evidence that the species was a crown specialist. During 1987 I was able to obtain evidence to support both of these contentions. In June 1987, I was collecting ladybirds from Scots Pines growing on an area of *Calluna* and *Erica* heathland just north-east of Cadnam, Hampshire (O/S reference SU307145). The pines at this site are of various ages, from young saplings to mature standards and some degenerating semi-senile trees. Beating the younger trees produced five species of ladybird, 7-spots (*Coccinella 7-punctata* L.), 10-spots (*Adalia 10-punctata* L.), pine ladybirds (*Exochomus 4-pustulatus* L.), eyed ladybirds (*Anatis ocellata* L.) and cream-spot ladybirds (*Calvia 14-guttata* L.), but no 18-spots. However, when I transferred my attention to the mature and semi-senile trees, it was immediately obvious that the 18-spot was present in numbers. Indeed it was more common than at any site where I have previously encountered the species. On one tree each beat of a branch produced two or three individuals. By the time I had worked about half way round the tree, and had found over twenty 18-spots, it occurred to me that the species was common enough on this tree to try to look for it by eye and test just how difficult it was to see. I therefore spent the next two hours searching all the pine branches on this tree which I could reach easily, and which I had not already beaten. I have been looking at or for insects for 25 years, and consider myself to be a reasonably practised collector with a good eye trained by experience. During the 2 hours I found just two 18-spots, one walking along a pine needle, and the other at rest on a male pine catkin where it was indeed superbly camouflaged. Many times I had to stop as I searched to be sure that a bud or catkin was not a ladybird. I found quite a number of other ladybirds, including a cream-streaked ladybird (*Harmonia 4-punctata* Pontopiddan) which itself was beautifully camouflaged on a pine bud. These are listed in Table 1 together with the results of subsequently beating these same branches, a process which took about 10 minutes. As can be seen, 14 more 18-spots were discovered by beating which bears witness to the effectiveness of the camouflage. Although my opinion that I have a good eye for insects took a severe knock from the fact that I missed seven-eighths of the 18-spots present, my judgement of myself is somewhat restored by the fact that I only 'missed' six other ladybirds.

Most ladybirds are thought to be poisonous to, or at least distasteful to, many predators, and their patterns of contrasting colours are generally considered to be warning colour patterns advertising their noxious properties. It has previously been

Table 1. Results of collecting ladybirds by eye-searching and beating half the reachable branches of a Scots Pine.

Species	Number found in 2 hours of eye searching	Number found by subsequently beating the searched branches
<i>Myrrha 18-guttata</i> L.	2	14
<i>Coccinella 7-punctata</i> L.	7	0
<i>Adalia 10-punctata</i> L.	3	2
<i>Anatis ocellata</i> L.	3	0
<i>Neomysia oblongoguttata</i> L.	5	1
<i>Exochomus 4-pustulatus</i> L.	9	2
<i>Harmonia 4-punctata</i> Pontoppidan	1	1
<i>Calvia 14-guttata</i> L.	2	0
<i>Propylea 14-guttata</i> L.	1	0

suggested that some of the species which live mainly on Scots Pine, such as the cream-streaked, striped, eyed and 18-spot ladybirds employ a dual colour pattern defense, being highly visible and warningly coloured when moving about on pine needles, and cryptically coloured when at rest on pine buds or male catkins (Majerus 1985). While I think that in the case of eyed and striped ladybirds, and to a lesser extent cream-streaked ladybirds, the warning component of their colouration is of crucial importance, I now suspect that the smaller 18-spot will escape detection the vast majority of the time through its cryptic properties, so its warning colouration (if it truly has warning colouration) is of secondary importance to its survival.

An unexpected opportunity to test whether the 18-spot is a crown specialist arose out of the catastrophic winds which caused such devastation across the south and east of England on the night of the 15th/16th October 1987. On the 19th October I had occasion to travel to Grimes Graves, Suffolk (O/S ref. TL820900), with a class of students. The site we visited is an area of breckland common with areas of bracken, some heather, and stands of young and mature Scots Pine. The mature trees are typical standard Scots Pine with the primary apex poorly developed and the foliate branches all down the trunk. This area is bordered by a large mixed conifer

Table 2. Numbers of 18-spot ladybirds found on different portions and different classes of Scots Pine.

Type of pine beaten	Number of pines	Amount of time spent (minutes)	Number of 18 spots found
Lower branches of mature trees on common	20	45	1
Young pines on common	45	25	0
Lower branches of fallen mature trees on common	3	10	1
Crown branches of fallen mature trees on common	3	15	8
Reachable branches of mature plantation trees	4	5	0
	(7 branches)		
Lower branches of fallen mature plantation trees	6	20	1
Crown branches of fallen mature plantation trees	6	20	11

plantation including Scots Pine. The mature Scots Pines are of a typical plantation form, having the primary apex strongly developed and the foliate branches confined to the top half of the tree.

Both the common area and the plantation had been severely hit by the storms and there were many fallen trees. This gave me the opportunity to beat the 'higher' branches which were now in easy reach. The reachable branches of still standing pines were also beaten, although in the case of the plantation trees only seven branches on four trees near the edge of the plantation could be reached. The foliate branches of fallen trees were roughly split into a top crown portion and a lower portion, the top crown being defined as branches within the top 10 feet of the primary apex of the tree. Table 2 shows the number of 18-spots that were found.

By the second half of October 18-spots will have taken up their over-wintering quarters. This data therefore shows that many 18-spots pass the winter high up amongst the crowns of pine trees. It does not provide definite evidence that this species also breeds in such a situation, however, I feel that this is highly likely.

REFERENCE

- Majerus, M.E.N. 1985. Some notes on ladybirds from an acid heath. *Bull. Amat. Ent. Soc.* **45**: 31-37.

BOOK REVIEWS

Dung beetles and chafers Coleoptera: Scarabaeoidea. L. Jessop. London, Royal Entomological Society, 1986, Handbooks for the Identification of British Insects, Volume 5, Part 11 (new edition), 54 pages, £5.

The first edition of this Handbook was written by E.B. Britton and published by the Society 30 years before in 1956. This is no mere rehash with a few additions, this is a completely new Handbook. The figure on the cover is the same and the old text figures are retained, but the text is radically altered. New is the checklist; new is the key to larvae; new are many of the characters; new are the expanded habitat and distribution details; new is the expanded reference list; new is the layout and new is the entire look and feel of the Handbook.

With nomenclature seemingly in a more or less permanent state of flux, the Scarabaeoidea is surprisingly little plagued with confusion. Nevertheless, the checklist is a welcome reference point and includes all the recent changes — notably the inclusion of *Onthophagus similis* (Scriba) and *O. joannae* Goljan (*O. ovatus* of British authors). *Saprosites mendax* Blackburn makes a late appearance after being mysteriously absent from the first edition. The key to larvae identifies to genus, although only two figures accompany it. The majority of the book is dedicated to keys and although introducing many new characters, suffers some of the same problems as Britton's. With such a diverse and distinct group of beetles, a single key to genera based on more overall characters would have sufficed, and indeed might have been preferable to any beginner who must now examine the club of the antennae to distinguish a stag beetle from a cockchafer from a dor beetle from an *Aphodius*. The keys to the Scarabaeoidea make long and complicated reading, as we are taken first to subfamily, then to tribe, then to genus, then to species. Identifying *Aphodius* is a necessary plod, with 41 species keyed out. The extra information on distribution and biology is very welcome and considerably expands and updates